

**BEST AVAILABLE COPY**REMARKS

The Office Action of July 2, 2003 has been carefully reviewed and this response addresses the Examiner's concerns. Claims 1-113 were pending in the application. Claims 8-100 were withdrawn from consideration. Claims 1-7 and 101-113 are rejected in the present Office Action.

More specifically, claims 1-7 and 101-105 are rejected under 35 U.S.C. 102(b/e) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as being obvious over Ettl et al. (US Patent # 6,001,166). This rejection is respectfully transversed.

The present invention discloses an improved method of sizing comprising **separately adding** to a cellulosic suspension (1) a sizing dispersion comprising at least one polymer having one or more aromatic groups and a sizing agent and (2) a sizing promoter comprising at least one polymer having one or more aromatic groups; and forming and draining cellulosic suspension. By "**separately adding**" is meant that the sizing dispersion and the sizing promoter are added to the cellulosic suspension at different locations in the paper mill or at the same location but separated in time. It is this separate addition that results in significant improvements in sizing (see present specification at page 8, line 37 to page 9, line 9). The terms "sizing dispersion" and "sizing promoter" are not simple characterizations, but instead indicate two separate compositions which are separately added to the cellulosic suspension.

Ettl discloses an aqueous alkyldiketene dispersion comprising an alkyldiketene, a cationic starch, and anionic dispersants. The alkyldiketene is dispersed into an aqueous solution of the cationic starch, and the anionic dispersants are added into the aqueous solution either with the alkyldiketene or after the alkyldiketene has been dispersed. It is this resultant aqueous alkyldiketene dispersion which is utilized as a body size in the manufacture of paper, meaning that the aqueous alkyldiketene dispersion is added to the cellulosic suspension from which the paper is being formed (see Ettl, comparative example 5, col 8, lines 41-47). Ettl does not teach, suggest or

disclose the separate addition of both a sizing dispersion and a sizing promoter, as described in the present invention and discussed above, to a cellulosic suspension.

Also in the Office Action, claims 1-7 and 101-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US Patent # 6,268,414) in view of Ueda (Laid Open Application 1992-363301). Claims 109-113 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US Patent # 6,268,414) in view of Ueda (Laid Open Application 1992-363301). Both of these rejections are also respectfully transversed.

Lin discloses a paper sizing composition containing a sizing agent, a dispersant system and an inorganic salt. The purpose of the sizing composition is to provide enhanced dewatering (through the presence of the inorganic salt), while maintaining stability of the sizing composition since organic sizing agents tend to be incompatible with inorganic salts. Hence, a key feature of the Lin invention is to provide a composition in which an inorganic salt, an organic sizing agent, and a dispersant system can be combined together and remain stable. It is this sizing composition that is added to the pulp slurry (eg cellulosic suspension). There is no disclosure, teaching or suggestion to separately add both a sizing dispersion and a sizing promoter, as described in the present invention and discussed above, to the pulp slurry (eg, cellulosic suspension).

Ueda discloses a neutral sizing agent having improved emulsification stability formed by adding a modified starch to a sizing agent selected from the group alkenylsuccinic anhydrides, alkylketene dimmers, alkylketene dimmer derivatives, and steric anhydride. This sizing agent can be added to and mixed with a pulp slurry for use as an internal sizing agent or can be added to the surface of a sheet for use as a surface sizing agent. Even if, in arguendo, a reading of Ueda would make it obvious to one skilled in the art to employ the aryl or alkylaryl bearing substituent in the cationic group of the cationic starch of Lin, there is still no disclosure, teaching or suggestion with regard to the separate addition of both a sizing dispersion and a sizing promoter to the


pulp slurry. Thus, the combination of Lin and Ueda would not make the present claims obvious to one skilled in the art.

For the reasons set forth above, the present invention is both novel and non-obvious over the cited references. The Applicant respectfully requests that the Examiner find the present application in condition for immediate allowance.

In accordance with Section 714.01 of the M.P.E.P., the following information is presented in the event that the Examiner deems a call desirable:

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